

Patent Claims:

1. A filter material (9; 18; 24) consisting of two stacked grid members (1; 2; 30, 31) **characterized in that** the grid members (1; 2; 30, 31) have a weld joint (23) between them.
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2. The filter material (9; 18; 24) according to claim 1, **characterized in that** the grid members (1; 2; 30, 31) are unmilled.
- 10 3. The filter material (9; 18; 24) according to one of the claims 1 or 2, **characterized in that** the grid members (1; 2; 30, 31) have structural elevations (20; 21A; 22A) and depressions and are bonded together in the region of their contact points (20; 21A; 22A).
- 15 4. The filter material (9; 18; 24) according to one of the claims 1 through 4, **characterized in that** the filter material (9; 18; 24) has more than one weld joint (23) per 0.5 square cm.
- 20 5. The filter material (9; 18; 24) according to one of the claims 1 through 5, **characterized in that** the filter material (9; 18; 24) has more than 5 weld joints (23), preferably more than 20 weld joints (23), per 1.0 square cm.

6. The filter material (9; 18; 24) according to one of the claims 1 through 5, ***characterized in that*** at least one grid member has between 5 or 10 and 1500 or 1200 yarns per cm.

5 7. The filter material (9; 18; 24) according to one of the claims 1 through 6, ***characterized in that*** the stacked grid members (1; 2; 30, 31) have differing structures.

10 8. The filter material (9; 18; 24) according to one of the claims 1 through 7, ***characterized in that*** one grid member (1; 2; 30, 31) is finer than another grid member (1; 2; 30, 31).

15 9. The filter material (9; 18; 24) according to one of the claims 1 through 8, ***characterized in that*** one grid member (1; 2; 30, 31) has openings of more than 5 mm in diameter, preferably of more than 20 mm in diameter.

20 10. The filter material (9; 18; 24) according to one of the claims 1 through 9, ***characterized in that*** one grid member (1; 2; 30, 31) has openings of 5.0 mm or less, preferably of less than 2.0 mm in diameter.

25 11. The filter material (9; 18; 24) according to one of the claims 1 through 10, ***characterized in that*** one grid member (1; 2; 30, 31) is a fabric (30).

12. The filter material (9; 18; 24) according to one of the claims 1 through 11, *characterized in that* one grid member (1; 2; 30, 31) is an expanded metal (31).

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13. The filter material (9; 18; 24) according to one of the claims 1 through 12, *characterized in that* a grid member (1; 2; 30, 31) with a coarser structure is disposed between two grid members (1; 2; 30, 31) having a finer structure.

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14. The filter material (9; 18; 24) according to one of the claims 1 through 13, *characterized in that* the filter material (9; 18; 24) is comprised of more than two stacked grid members (1; 2; 30, 31).

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15. The filter material (9; 18; 24) according to one of the claims 1 through 14, *characterized in that* the stacked grid members (1; 2; 30, 31) are made from different materials.

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16. The filter material (9; 18; 24) according to one of the claims 1 through 15, *characterized in that* the filter material (9; 18; 24) comprises a weld flange (16).

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17. The filter material (9; 18; 24) according to one of the claims 1 through 16, *characterized in that* spacers (27) are disposed between two grid members (1; 2; 30, 31).

18. The filter material (9; 18; 24) according to one of the claims 1 through 17, *characterized in that* the spacers (27) are welded to the grid members (1; 2; 30, 31).

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19. The filter material (9; 18; 24) according to one of the claims 1 through 18, *characterized in that* a filter material (9; 18; 24) is comprised of two grid members (1; 2; 30, 31) with a fine structure that are each welded to grid members (1; 2; 30, 31) having a coarser structure and that spacers (27) are disposed between the grid members (1; 2; 30, 31) having the coarser structures.

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20. The filter material (9; 18; 24) according to one of the claims 1 through 19, *characterized in that*, in the border regions (29A, 29B), the filter material (9; 18; 24) is comprised of a sheet metal strip (34, 35) in the direction of its longitudinal axis.

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21. The filter material (9; 18; 24) according to claim 20, *characterized in that* the sheet metal strip (34, 35) is less than 100 mm, preferably less than 20 mm, wide.

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22. The filter material (9; 18; 24) according to one of the claims 20 or 21, *characterized in that* the sheet metal strip (34, 35) projects at least partially beyond at least one grid member (1; 2; 30, 31).

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23. The filter material (9; 18; 24) according to one of the claims 20 through 22, *characterized in that* two sheet metal strips (34, 35) are welded together.

5 24. The filter material (9; 18; 24) according to one of the claims 1 through 23, *characterized in that* the filter material (9; 18; 24) comprises a frame.

10 25. The filter material (9; 18; 24) according to claim 24, *characterized in that* the frame is at least partially disposed between two grid members (1; 2; 30, 31).

26. A filter body, *characterized in that* the filter body comprises a filter material (9; 18; 24) according to one of the claims 1 through 24.

15 27. The filter body according to claim 26, *characterized in that* the filter body is a filter frame, a filter plate, a filter with a U-shaped profile, a filter ring or a filter cylinder (33).

20 28. A method of manufacturing a filter material (9; 18; 24) consisting of several grid members (1; 2; 30, 31), *characterized in that* the method comprises welding the grid members (1; 2; 30, 31) together.

29. The method according to claim 28, *characterized in that* the method comprises welding the grid members (1; 2; 30, 31) together to form a continuous length of material.

5 30. The method according to claim 28 or 29, *characterized in that* the grid members (1; 2; 30, 31) are pressed together at a pressure in excess of 30 bar, preferably in excess of 50 bar, during the welding process.

10 31. The method according to one of the claims 28 through 30, *characterized in that* the grid members (1; 2; 30, 31) are welded with a weld impulse of less than 10 milliseconds or of less than 5 milliseconds, preferably of about 2 milliseconds.

15 32. The method according to one of the claims 28 through 31, *characterized in that*, for welding, the grid members (1; 2; 30, 31) are pressed against each other using at least one welding die.

20 33. The method according to one of the claims 28 through 32, *characterized in that* the filter material (9; 18; 24) is provided with sheet metal elements and that the sheet metal elements are welded together so that the filter material (9; 18; 24) yields a cylindrical filter body.